who are really well. Of the remainder, one has carried on fairly well, with symptoms, for sixteen years; another similarly for fifteen and a half years; and a third for thirteen years. In none of these three cases was ureteral catheterisation carried out. Deposits were present, when first seen, in prostate, vesiculæ, or epididymis, and in all three tubercle bacilli were found in the urine. The diagnosis of kidney involvement was made by cystoscopic examination of the ureteral orifices. One early bilateral case is reported to be well except for an occasional "turn" of frequency, seven and a half years after the onset of symptoms. Lastly, in the other survivors, symptoms remain five years and under from the onset of their illness.

These statistics support the contention that, with our present knowledge, operation remains the most hopeful method of treatment in tuberculosis of the kidney. If done early, before deep ulceration has taken place in the bladder, relief is often immediate. Even in late cases, if the other kidney is sound, the patient may still be cured. Deep ulceration of the bladder renders the prognosis less hopeful, especially as regards the relief of frequency of micturition. Even if healing takes place, the scarred and contracted bladder is unable to expand, and the patient is obliged to empty it at frequent intervals.

Lupus Vulgaris

By J. C. RANKIN, M.D.
from the Royal Victoria Hospital, Belfast

LUPUS VULGARIS is a tuberculous disease of the skin and mucous membrane, with a tendency to spread, destroying skin and cartilage. The result often is much disfigurement.

SITUATION.—One-third of the cases attack the end of the nose, upper lip, and nasal mucous membranes. One-third spread up over the cheek or cheeks. In one-third the body is attacked. In one-third of the cases lesions are present on both body and face.

The disease consists of an applejelly-coloured, semi-translucent infiltration of the cutis vera, below the epidermis, slowly spreading at the periphery, ulcerating and healing with scar tissue in the centre. Patches of unhealthy tissue are often left in the scar, and the whole condition is very difficult to cure.

DISTRIBUTION.—*Nasal lupus* attacks the nose and upper lip—the premaxillary region. The inside of the nose is always attacked, so that an ulcer or perforation of the cartilaginous septum will practically always be found, and is of great diagnostic importance. The turbinals in their anterior part are attacked, recognised as pale nodular swellings, or are atrophic and destroyed. The lachrymal duct is obstructed, so that a mucocele or dacryocystitis is or has been present. The gums around the incisors may be sites of disease. Exsanguination by a glass compressor will show the characteristic applejelly tissue, and differentiate it from pyorrhœa or pyogenic abscess. A triangular patch may be found on the hard palate. The epiglottis has often a crumpled appearance. The part affected is that of the lymphatic drainage area.

The Cheeks.—A spreading circle advances over the cheek. The circle may be incomplete, so that only a patch may appear. If on the centre of the cheek, the line is towards the inner canthus. If on the temple, it spreads upward. Towards the outer side of the eye, on healing with scar, it leaves ectropion. Lower down it may attack the alæ nasi and resemble nasal lupus. It may pass to the ear, or a circle convex towards the back of the neck and down over the back, or forward below the chin and over the front of the chest. Very rarely do we get the lower gums attacked. The condition there is apt to be papillomatous, and the applejelly tissue is diagnostic. The centre of spread is from the submaxillary glands, and the area liable to be affected is that of the lymphatic drainage, with the line of spread against the lymph flow. The glands are not much enlarged.

On *the body* the hips are a common site. Here the iliac glands are the centre, and convex curves pass over the hips towards the anus. I have never seen the disease-ring or part of a ring reach so far as the anus or vulva. The wrists and ankles are also affected, and the skin here is apt to become hyperkeratotic. From a point on the back of the hand, about the styloid process of the ulna, rings form, mostly incomplete, coming to the skin at varying distances from this part. In some cases the disease appears first at the base of the fingers, the ring so incomplete that it involves two, perhaps only one finger. The line of spread distalward.—The presence of another small segment of the circle may show that it is of the same type as the smaller and more complete rings on the back of the hand. These cases have been taken as examples of local inoculation; but I have never seen a case that did not conform to type, or where I was satisfied that such an inoculation had occurred. Other points of spread are about the elbows, knees, and shoulders, or along the loins.

Diagnosis.—By using a glass compressor to exsanguinate the part, the semi-translucent applejelly tissue becomes apparent, and is pathognomic. Acne, rosacea, or furuncle, no matter how severe, when the capillary blood is expressed, show white tissue. Moles and freckles can be easily distinguished, being opaque. The situation and line of spread of the disease have diagnostic significance. Rodent ulcer has frequently been confused with lupus, usually in older people. Its situation in relation to the cutaneous nerves of the face, as pointed out by Lenthal Cheatle, the waxy, raised edge and base, the fact that bone is attacked, and absence of lupus tissue, should show the difference. Syphilis is a great imitator. I have often been mistaken here, and only been corrected by the absence of therapeutic response to X-ray and light treatment. A Wassermann reaction clears up the diagnosis. The applejelly colour is not seen. Lupus erythematosis has hard scales plugging the glands, a characteristic spread, does not invade the inside of the nose, there is no lupus tissue, a thin papery scar, and the ears often affected. Scrofuloderma, a tubercular disease of deeper structure, has the applejelly tissue at the edges of the ulcer. It has not the spreading character of lupus, and heals, leaving a well-marked, but healed, scar.

The older terms of struma and scrofula, founded on clinical observation, are generally used as synonyms. The whole description, when epithelioma, rodent

ulcer, goitre, etc., were not excluded, is necessarily confused. The word 'scrofula,' however, to my mind, gives a very perfect description of the earliest stage of lupus of the cheeks. A submaxillary gland becomes affected. If this goes on to complete breaking down, with bursting of the gland capsule, a chronic abscess is formed, which may open below the jaw, eventually healing with the well-recognised scars. If, however, the gland only swells moderately, the firm capsule remaining intact, the peri-lymphatic space is obliterated, and a lymph block occurs. The distal lymphatics fill with fluid, and swell. How much this may be, may be seen by referring to Sappey's drawings. The cheeks and neck will appear fat, in contrast to the tip of the nose and lips, which have a different lymphatic drainage. The fat, round neck and cheeks, contrasting with the peaky nose and lips, gives an appearance well described as scrofula—a little pig.

If we consider the lymphatic vessels and remember that their ends are closed, and the lymphatic fluid, with its specific gravity somewhere about 1014, poor in proteins, different from blood serum of the tissues, with its specific gravity 1028, and rich in proteins, the fluid will soon lose any complement or antitryptic quality. Leucocytes which wander in, and fibroblasts, will be ill-nourished. Tubercle bacilli or exotoxin, gaining access to this closed system, will help to injure them further, and so we may get the applejelly tissue, so characteristic of lupus. These blocked lymphatics give a term to the site, the spread, and chronicity of the disease. In the later stage of scrofula, when the lymphatics atrophy or fluid is absorbed from them, the thin cheeks of the faces portrayed by Rossetti and Burne Jones are seen.

In the nasal type of lupus, with blocking of the lymphatics of the premaxillary area, the picture is that often described as "strumous," or the torpid type of scrofula—thick nose, with mucous running, and large, thick upper lip.

TREATMENT.—Finsen of Copenhagen was the originator and inspirer of modern methods of treating lupus.

The light treatment as used by him resulted in cures in many cases, with the best cosmetic results that had been obtained. The treatment by concentrated light rays over the parts exsanguinated by compression and kept cool to prevent the heat rays burning, required an elaborate technique, probably never thoroughly followed out elsewhere. It was tedious and costly. X-rays were soon found to have a favourable effect, and it was often observed that not only the part directly treated seemed to to benefit. I believe this may be explained by the radiation of the glands incidentally. The X-ray scar was not so good as that left by Finsen treatment, and undesirable results such as burns and telangiectasis, and malignant changes, all occurred through want of understanding in the early days.

Generalised sunbaths as first practised by Rollier were a great advance. Here I believe that the carbon arc lamp is distinctly superior to the mercury vapor lamp.

Diet has lately come more into consideration in lupus, especially in Germany, Gerson's diet being there much used. It is, briefly, no salt, raw vegetables, little meat or carbohydrates.

Salt is tasty as a condiment; in fact, one might say it was the salvation of the bad cook. Nowadays table salt is much adulterated with phosphates, and is not

the pure sodium chloride that has always been so much coveted. Sodium chloride, readily diffused throughout the tissues by osmosis, attracts water to them, and it is fattening. It is probably not desirable that tubercular tissues should be swollen up.

Raw Vegetables.—Probably so that they retain all their vitamins. They are very tasteless and cause flatulence. Care should be taken to have them mixed with cress, garlic, or some definite condiment and carminative.

Restriction of Meat.—I see no reason for this except economy.

Fats.—Cod liver oil has long been famous. It contains two important vitamins. The vitamins and diet has been a most important line of advance.

Immuno-therapy.—In tubercle there is no immunity test that can be practically applied in the laboratory that meets with general acceptance. In other words, the degree of immunising response of tubercle is so small that little can be expected along these lines. It is not to be compared with the immunity that can be produced for diphtheria, meningococcus, typhoid, etc.

Special and Accessory Treatment.—In nasal lupus the nose is generally unhealthy. Plugging the nostrils with iodoform gauze for twenty-four hours helps to clear things up, and one sees the extent of the disease better. The catarrhal condition extends to the lachrymal sac—this requires special attention. Passing of probes generally fails to open up the path. The late W. A. McKeown used to slit the lower canalicus, allowing free drainage, with good results—as good, I believe, as excision of the sac. Even when pus can be expressed from the lachrymal sac, the conjunctiva may be quite clear.

Phlyctenular ophthalmia is not uncommon in children. Calomel powder dusted in does very well—better, in my experience, than ointments or colloidal silver.

The Eustachian tubes are apt to get inflamed, leading to deafness. The drum is retracted, and I have seen cases where it became adherent to the inner wall of the middle ear, leading to permanent partial deafness. Timely, skilled treatment should prevent this.

Strangely, I have seen little disease of the sinuses, though one would expect it with noses as bad as are frequently seen in lupus. There is undoubtedly a lupiod condition of the larynx that has been confounded with the more serious tubercular laryngitis.

The ectropion of the lower eyelid may be relieved by skin-graft once the lupus is healed.

As cartilage does not inflame, the nasal cartilages are apt to slough, though they have a strong resistance. The bone is not affected.

Plastic operations on the nose require great skill on the part of the operator, and take a long time, as they must be done bit by bit. I have seen lupus tissue grow into a transplant. In order to cure a small nick in the nostril, one of the most skilful plastic surgeons had a patient on the table on some fifty occasions.

An artificial nose is a great benefit when the nose has been destroyed. It is best made of aluminium, and is easily attached with spirit gum. It should not be too pale. Glasses help to conceal the margin. Though very apparent when demonstrated, it is wonderful how the patients say that hardly anyone notices it.